

Claims

WHAT IS CLAIMED IS:

1. Apparatus for determining a dorsiflexion angle of a surgical patient's foot relative to the corresponding leg during tendon surgery, said apparatus comprising:

a leg member having a first support adapted for engaging at least one of a lateral malleolus and a medial malleolus of the patient, and a second support opposing the first support adapted for engaging another of the lateral malleolus and the medial malleolus of the patient; and

a foot member rotatably connected to the leg member for selectively rotating the foot member relative to the leg member about an axis defined by the first support and the second support of the leg member, the foot member having a metatarsal support adapted for engaging a predetermined point on at least one preselected metatarsal bone of the patient.

2. Apparatus in accordance with Claim 1 further comprising a gage operatively connected between the leg member and the foot member for measuring an angle between the leg member and the foot member.

3. Apparatus in accordance with Claim 2 wherein the gage comprises an angle indicator connected to one of the leg member and the foot member for rotation with the respective member about the axis and a legend connected to another of the leg member and the foot member adjacent the angle indicator for indicating the angle between the leg member and the foot member, said angle being representative of the dorsiflexion angle of the surgical patient's foot.

4. Apparatus in accordance with Claim 2 further comprising a reference arm extending from the gage adapted for engaging the leg of the patient at a predetermined point above the lateral malleolus and the medial malleolus of the patient.

5. Apparatus in accordance with Claim 4 wherein the reference arm comprises a first end adapted to be received within an opening in the gage, and a second end adapted for engaging a head of a fibula of the patient's leg.

6. Apparatus in accordance with Claim 4 wherein the reference arm comprises a first end adapted to be received within an opening in the gage, and a second end adapted for engaging a medial condyle of a tibia of the patient's leg.

7. Apparatus in accordance with Claim 4 wherein the reference arm further comprises a strap attached to the reference arm for securing the reference arm to the predetermined point above the lateral malleolus and the medial malleolus of the patient.

8. Apparatus in accordance with Claim 1 wherein the leg member and the foot member are connected by a clevis joint having an axis of rotation generally coincident with said axis defined by the first support and the second support of the leg member.

9. Apparatus in accordance with Claim 1 wherein the leg member further comprises a shin support connecting the first support to the second support and being sized and shaped for receiving a portion of the patient's shin.

10. Apparatus in accordance with Claim 9 wherein the shin support includes a cushion for engaging the patient's shin when the patient's shin is received within the shin support.

11. Apparatus in accordance with Claim 8 wherein the leg member further comprises a strap attached to the shin support for securing the shin support to the patient's shin to facilitate secure attachment of the leg member to the patient's leg.

12. Apparatus in accordance with Claim 1 further comprising a spring for biasing the second support toward the first support to facilitate secure attachment of the leg member to the patient's leg.

13. Apparatus in accordance with Claim 1 wherein the metatarsal support has a recess for receiving one of a first metatarsal head and a fifth metatarsal head of the patient therein.

14. Apparatus in accordance with Claim 1 wherein the metatarsal support has a first recess for receiving a first metatarsal head of the patient's foot and a second recess opposing said first recess for receiving a fifth metatarsal head of the patient's foot.

15. Apparatus in accordance with Claim 14 wherein the first and second recesses lie along a line extending obliquely with respect to the axis defined by the first support and the second support of the leg member.

16. Apparatus in accordance with Claim 15 wherein the line extends obliquely at an angle of about 10° with respect to the axis defined by the first support and the second support of the leg member.

17. Apparatus in accordance with Claim 1 further comprising a stop connected to one of the leg member and the foot member for limiting rotation of the foot member relative to the leg member.

18. A method for determining an angle of dorsiflexion of a surgical patient's foot during tendon surgery, said method comprising the steps of:

establishing a first plane corresponding to the patient's leg by locating a lateral malleolus of the patient, locating a medial malleolus of the patient, and locating a predetermined point on the patient's leg above the lateral malleolus and the medial malleolus;

establishing a second plane corresponding to the patient's foot by locating a first metatarsal head of the patient and locating a second metatarsal head of the patient; and

measuring an angle between the first plane and the second plane to determine the dorsiflexion angle of the patient's foot.

19. Apparatus for determining a dorsiflexion angle of a surgical patient's foot relative to the corresponding leg during tendon surgery, said apparatus comprising:

a leg member having a first support adapted for engaging at least one of a lateral malleolus and a medial malleolus of the patient, a second support opposing the first support adapted for engaging another of the lateral malleolus and the medial malleolus of the patient, and a reference arm extending from at least one of the first support and the second support adapted for engaging the leg of the patient at a predetermined point above the lateral malleolus and the medial malleolus of the patient; and

a foot member rotatably connected to the leg member for selectively rotating the foot member relative to the leg member about an axis defined by the first support and the second support of the leg member, the foot member having a metatarsal support adapted for engaging a predetermined point on at least one preselected metatarsal bone of the patient.

20. Apparatus in accordance with Claim 19 further comprising a gage operatively connected between the leg member and the foot member for measuring an angle between the leg member and the foot member.

21. Apparatus in accordance with Claim 20 wherein the gage comprises an angle indicator connected to one of the leg member and the foot member for rotation with the respective member about the axis and a legend connected to another of the leg member and the foot member adjacent the angle indicator for indicating the angle between the leg member and the foot member, said angle being representative of the dorsiflexion angle of the surgical patient's foot.

22. Apparatus in accordance with Claim 19 wherein the reference arm comprises a first end adapted to be received within an opening in one of the first support and the second support, and a second end adapted for engaging a head of a fibula of the patient's leg.

23. Apparatus in accordance with Claim 19 wherein the reference arm comprises a first end adapted to be received within an opening in one of the first support and the second support, and a second end adapted for engaging a medial condyle of a tibia of the patient's leg.

24. Apparatus in accordance with Claim 19 wherein the reference arm further comprises a strap attached to the reference arm for securing the reference arm to the predetermined point above the lateral malleolus and the medial malleolus of the patient.

25. Apparatus in accordance with Claim 19 wherein the leg member further comprises a shin support connecting the first support to the second support and being sized and shaped for receiving a portion of the patient's shin.

26. Apparatus in accordance with Claim 25 wherein the leg member further comprises a strap attached to the shin support for securing the shin support to the patient's shin to facilitate secure attachment of the leg member to the patient's leg.

27. Apparatus in accordance with Claim 19 further comprising a spring for biasing the second support toward the first support to facilitate secure attachment of the leg member to the patient's leg.

28. Apparatus in accordance with Claim 19 wherein the metatarsal support has a first recess for receiving a first metatarsal head of the patient's foot and a second recess opposing said first recess for receiving a fifth metatarsal head of the patient's foot.

29. Apparatus in accordance with Claim 28 wherein the first and second recesses lie along a line extending obliquely with respect to the axis defined by the first support and the second support of the leg member.

30. Apparatus in accordance with Claim 19 further comprising a stop connected to one of the leg member and the foot member for limiting rotation of the foot member relative to the leg member.